Legislative Services Agency

MINUTES

Genetically Modified Organisms (GMOs) Study Committee

December 13, 2005

MEMBERS PRESENT:

Senator E. Thurman Gaskill, Co-chairperson
Senator Thomas Rielly, Co-chairperson
Senator Joe Bolkcom
Senator Thomas Courtney
Senator David Johnson
Senator David Miller
Representative Sandra Greiner, Co-chairperson
Representative Betty De Boef
Representative Doug Struyk
Representative John Whitaker

MEETING IN BRIEF

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of two meetings of the Genetically Modified Organisms (GMOs) Study der by Co-chairperson Greiner at 10:05 a.m., Tuesday, December 13, 2005, in Room 19 of the State Capitol Building in Des Moines, Iowa.

Preliminary Business. Co-chairperson Greiner observed that the Co-chairpersons determined that the Senate Co-chairpersons would be responsible for the first meeting's agenda, while House Co-chairpersons would be responsible for today's meeting, though it was difficult to accommodate the many speakers who wished to testify before the Committee, and therefore some of the Senate's presenters were included in the second meeting agenda.

Adjournment. The meeting recessed for lunch at 11:50 a.m., reconvened at 12:47 p.m., and adjourned at 3:05 p.m.

II. Legal Issues.

Dr. Drew L. Kershen, Earl Sneed Centennial Professor of Law, University of Oklahoma College of Law, observed that he has been a law professor since 1971 and he operates a family farm. He presented testimony via the Iowa Communications Network concerning the following topics:

- **Coexistence.** Dr. Kershen identified three themes for coexistence: good husbandry, which is farmers following good agricultural practices that are practical and inexpensive; neighborly cooperation, which involves good communication, working together, and a neighborly attitude; and farmer choice, by which a farmer is allowed to choose the agricultural production the farmer desires as best for the farmer's operation, whether conventional, organic, or transgenic. This last theme supports a position he reiterated throughout his presentation, which he termed a general rule in farming: If a farmer seeks a premium price for a premium product, it is the farmer's obligation to bear the cost of seeking standards above that of the mainstream.
- **Prevalence of Transgenic Crops.** A 2004 study published in the United Kingdom found evidence that genetically modified crops account for 60 percent of total soybean, corn, and canola grown in North America and have coexisted with conventional and organic crops without significant economic or commercial problems. In fact, Dr. Kershen pointed to studies conducted in Italy, Germany, Australia, and France that provide evidence that cross-pollination occurs at very low levels between fields.
- **Organic Standards.** Dr. Kershen discussed regulations addressing "adventitious presence" (unwanted material included in a crop, including transgenic material but also small quantities of weed seeds, seeds from other crops, dirt, insects, or foreign material such as plastic or stone). He noted that no farmer grows and harvests an absolutely pure crop, devoid of such impurities. Dr. Kershen described federal organic standards as "process-based." Certification attests to an organic production operation's compliance with production standards and practices and the mere presence of a detectable residue of a product of excluded methods alone does not necessarily constitute a violation of this regulation. The test is whether an organic operation avoids the use of excluded methods and takes reasonable steps to avoid contact with the products derived from excluded methods as detailed in an approved organic system plan. Organic production regulations adopted by the European Union have specific thresholds for the unavoidable presence of transgenic materials (0.9 percent for labeling food as organic and 0.3 percent for selling seed as organic). The International Federation of Organic Agricultural Movements (IFOAM) recognizes that there is no guarantee that organic products are 100 percent free from the adventitious presence of transgenic material. IFOAM

adopted a policy in 2002 which provides that "(M)arketing of organic products and information about organic agriculture shall not imply that it is 'GE-free' certification. Rather it shall be presented as guaranteeing 'production without GE/GMOs.'"

- **Contractual Arrangements.** Depending upon the voluntarily accepted contract specifications, adventitious presence can affect premiums and market access. Zero tolerance as a contract standard is not achievable without a ban on transgenic agriculture. To ban transgenic agriculture undermines the three themes of coexistence.
- **Civil Liability.** As of December, there have been no lawsuits between farmers in which adventitious presence has been an issue. The successful StarLink lawsuit involved an unapproved transgenic crop which commingled into the food supply.
- **Discussion.** Dr. Kershen and Committee members discussed legislation in other states, including Vermont, California, and Hawaii, and the possible establishment of an indemnity fund to compensate producers for losses related to the presence of transgenic material in genetic or identity-preserved grain. He argued that indemnity funds are unnecessary because those who suffer losses know and accept the risks and should be able to get their own insurance.

III. Pollen Flow Research.

Dr. Mark Westgate, Professor, Department of Agronomy, Iowa State University (ISU) College of Agriculture, began by observing that a number of agencies are serious about developing standards and regulations for transgenic crops. Seed companies are working together to move forward on the establishment of minimums to avoid future problems such as those caused by Starlink. Dr. Westgate testified on the following topics:

- **Food Safety.** Dr. Westgate noted that adventitious presence is not a food safety concern, and discussed the federal government's system of coordinated regulation among the U.S. Department of Agriculture, Environmental Protection Agency, and Food and Drug Administration that is designed to ensure that crops intended for food or feed are as safe to eat as conventional crops. He opined that the system to keep the public safe is working, but is not perfect. In a survey conducted by the International Food Information Council this year, individuals surveyed indicated that food handling or preparation was the number one primary food safety concern and sugar and carbohydrates are the most avoided foods or ingredients. Biotechnology concerned less than 1 percent of those surveyed. No minimum food tolerance or exemption is permitted for crops under experimental evaluation. The adventitious presence of transgenics in organic, nongenetically engineered crops causes problems in selling the product, but is not a problem as far as the federal regulatory agencies are concerned.
- **Modeling.** Dr. Westgate stated that much is known about the pollination process. Pollen drift is a natural and predictable phenomenon in corn production. The Biosafety Institute for Genetically Modified Agricultural Products at ISU was created to provide science-based analysis of the risks and benefits of genetically modified plant and animal products. The institute helps growers take advantage of new products while safeguarding valuable agricultural resources. Models of pollen dispersal can provide producers with accurate management information in order to isolate nontransgenic crops from possible contamination. Dr. Westgate discussed a number of biological and physical factors, including topography, atmospheric conditions, and the nature of the source and receptive crops (pollen shed characteristics and

floral synchrony). Pollen drift has been a problem for a long time, mostly because of how the crops are grown and because efforts to control drift cut into profits. However, he described a research project in which white corn was planted in a neighboring field where yellow corn was planted in 2003 and 2004. In the test field of white corn, at 35 meters less than 0.9 percent of the seeds were yellow and at 100 meters less than 1 percent of the seeds were yellow. He noted that there are concerns regarding the federal Animal and Plant Health Inspection Service's (APHIS) regulations relating to how field structures impact pollen movement, but noted that he is working with APHIS to help improve its regulations.

- **Conclusions.** Dr. Westgate stated that it is impossible to ensure a zero tolerance standard, not because it cannot be achieved, but because it cannot be proven. Farmers must be aware of what their neighbors are doing and cooperate with their neighbors. A number of barriers may be used to reduce adventitious presence, including physical structures, biology (sterility and terminator genes), mechanical techniques (detasseling and hand pollination), spatial practices (isolation distances), and temporal practices (delayed planting).
- **Discussion.** Dr. Westgate discussed issues relating to how atmospheric conditions affect pollen flow, consumer attitudes toward transgenic foods, and the impossibility of eliminating some level of adventitious presence.

IV. Separation Requirements and Recommendations.

Dr. Gregory Lamka, Quality Supply Technology Manager, Pioneer Hi-Bred Inc., provided testimony concerning the following topics:

- **Iowa Seed Production.** Dr. Lamka noted that by federal law, seed producers must achieve a minimum of 95 percent genetic purity or the label must list the other seed mixtures in the product. He discussed the Association of Official Seed Certifying Agencies, a third-party organization involved in establishing minimum genetic standards and uniform certification procedures. Most member organizations have programs for identity-preserved (IP) grain as well as seed certification. Seed companies enter into agreements with producers subject to stringent conditions in which the companies furnish the seed stock for planting and the producers provide the land, equipment, and labor. A producer is responsible for providing the proper degree of isolation, including by making arrangements with their neighbors. A minimum of three field inspections must be performed by a representative of the certifying agency, and off-type plants must be destroyed (roguing).
- **Pollen Dispersal.** Dr. Lamka discussed corn pollen dispersal, noting that corn pollen is relatively heavy and rapidly falls out of the air. Rows of male plants must be planted in proximity to rows of female plants. In cases of abundant pollen shed, pollen can be transported some distance, die within a few hours of shed, or germinate within minutes of falling on a receptive silk (a silk is receptive for approximately six days).
- **Identity-Preserved Grain Production.** Dr. Lamka noted that seed crops are the original IP crops. Producers and seed companies are responsible for the isolation and other management practices needed to ensure that crops meet genetic standards, and crops used for seed production and for commercial grain have coexisted for decades. Dr. Lamka described a number of strategies to reduce adventitious presence, including selecting a large field, providing increased isolation distances, removing 12 to 16 border rows, cleaning

equipment, planting high-quality seed, avoiding planting the same crop two consecutive years, and keeping adequate records. IP producers are paid a premium to take these extra measures; it is not the responsibility of adjoining growers to take these measures.

- **Discussion.** Dr. Lamka and Committee members discussed management practices, contract requirements, and the possibility of creating a state indemnity fund to compensate producers for losses associated with transgenic contamination.

V. Producer Management Practices.

A panel of producers who grow both conventional (nontransgenic) and transgenic crops discussed how they manage their crops to achieve coexistence. The panel included:

A. Mr. James David Petersen, who produces transgenic crops, conventional crops, and organic crops.

B. Mr. Bill Horan, who produces approved transgenic crops (may be used for food), transgenic crops which are not approved as food and may be used in pharmaceutical products, and conventional crops.

C. Mr. Franco Owens, who produces transgenic crops and conventional crops.

The panel testimony is as follows:

- **Operations.** Mr. Petersen, Mr. Horan, and Mr. Owens each described their operations. Mr. Petersen raises both livestock and crops, including hay, oats, soybeans, and corn. He began transitioning to organic production in 2003 and in 2005 harvested conventional corn, conventional soybeans, Bt corn, Roundup Ready soybeans, organic corn, and organic soybeans. He noted that the late July planting of organic corn helped avoid contamination. The three panelists described their management practices. Mr. Petersen emphasized the intensive use of labor, time, and equipment to control weeds (e.g., cultivating a field). However, he noted that the premiums are there for organic, though it is more labor-intensive. The premiums allowed him to diversify. Mr. Horan described the special challenges confronting a producer engaged in the production of a crop such as corn, tobacco, or barley which is used in the manufacture of pharmaceuticals and requires special federal approval and oversight. Mr. Horan discussed his contractual relationship with Meristem Therapeutics, a French biotechnology company. He discussed production of a special variety of corn to manufacture a human enzyme, lipase, used in treating cystic fibrosis.
- **Discussion.** Mr. Petersen, Mr. Horan, and Mr. Owens discussed a number of issues with members of the Committee. Some of the discussion involved the recognized value of the "skills set" possessed by Iowa and other Midwestern farmers able to efficiently produce crops, including biotechnological crops used in the manufacture of pharmaceutical products. Mr. Horan noted that producers who traditionally possess this specialized managerial ability may be able to prosper by growing these new transgenic crops on relatively small farms. He suggested that pharmaceutical crops reward management, not volume, and therefore could most benefit smaller producers. Mr. Petersen discussed the expanding markets for organic food and the premiums that he has received for producing organic commodities. Panel members discussed proposals for the creation of an indemnity fund. Mr. Horan expressed support for the idea in

concept and suggested that large pharmaceutical companies should pay the largest share in the fund.

VI. Committee Discussion.

Members noted that Iowa agriculture is in a state of transition, and discussed the importance of revitalizing rural Iowa and assisting farmers to increase their markets. Senator Bolkcom expressed support for a Committee recommendation to expand the Grain Depositors and Sellers Indemnity Fund created in Code section 203D.3 to cover losses associated with adventitious presence. Members discussed the fund, its ending balance, and contributions made by producers. Co-chairperson Greiner and Senator Miller stated that they were not prepared to make recommendations at this time, but that issues involving transgenic crops could be revisited during the 2006 Legislative Session.

VII. Materials Filed With the Legislative Services Agency.

The materials listed were distributed at or in connection with the December 13 meeting and are filed with the Legislative Services Agency. The materials may be accessed from the "Additional Information" link on the Committee's Internet page:

http://www.legis.state.ia.us/aspx/Committees/Committee.aspx?id=71.

1. Powerpoint offered by Dr. Drew Kershen.
2. *Proposed Liability for Transgenic Crops,* submitted by Dr. Kershen.
3. *Adventitious Presence,* by Dr. Kershen.
4. *Growing Genetically Engineered (GE) and Conventional Crops Side by Side,* a Powerpoint presentation offered by Dr. Mark Westgate.
5. Written Testimony of Mr. Bill Latham.
6. *Separation Requirements and Recommendations,* a Powerpoint presentation offered by Dr. Gregory Lamka,
7. *Environmental and Production Benefits Drive Greater Demand for Biotech Crops,* a press release issued by the National Center for Food and Agricultural Policy on December 6, 2005, submitted by Dr. Lamka.
8. *Iowa: Fields of Opportunity,* a Powerpoint presentation offered by Mr. Bill Horan.
9. Written Testimony of Mr. Jim Petersen.

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